

REMARKS

Claims 1-27 were pending, of which claims 4, 5, 8, 9, and 16 were withdrawn. Support for amended claim 1 and new claims 28-31 can be found, for example, in the Applicants' specification at ¶[0013]. Claims 1-3, 6, 7, 10-15, 17-31 are presented for examination in view of the amendments and the following remarks.

Claims 1-3, 6, 7, 10-15, and 17-26 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pub. No. 2003/0203210 ("Graff"). However, Graff has not been shown to have described a method for forming an arrangement of two barrier layers on a substrate including "modifying at least a portion of [a] second surface of [a] first ceramic barrier layer such that the second surface of the first ceramic barrier layer comprises a material different from the material of the first ceramic barrier layer located below the second surface to introduce first nucleation sites on the second surface . . .," as recited in amended claim 1.

Graff described a multi-layer environmental barrier coating 10 including a flexible substrate 12, a foundation stack 20, at least one barrier stack 30, and a topmost isolation layer.¹ In the cited embodiments, polymeric material forming the flexible substrate 12 can be plasma-treated using methods falling into two categories based on the working gas mixture used.² Graff described using these plasma treatment methods to treat organic surfaces such as polymeric substrates.³ Thus, even if either of these plasma treatment methods could be considered to change the material on the surface of an organic surface such as a polymeric substrate, which the Applicants do not concede, Graff has not been shown to have described plasma treatment for changing the material on the surface of a ceramic barrier layer to a material different from the material of the first ceramic layer.

Graff described plasma treatment of inorganic layers to make structural modifications and certain types of chemical modifications to remove surface contaminants. For example, Graff described plasma treatment of a surface of a foundation barrier layer 22 comprising aluminum

¹ See, e.g., Graff at ¶[0039].

² See, e.g., *id.* at ¶[0065].

³ See, e.g., *id.* at ¶[0065]-[0069].

oxide to achieve the benefits of “removal of contaminants, dehydration, and modifying the effective surface area and density of the treated surface.”⁴ Graff also described that “[p]lasma-treatment of the barrier layers 22 and 32 following their deposition may further reduce the amount of contaminants that have migrated through or settled onto the surface from the atmosphere of the working chamber” and that “[p]lasma-treatment of the barrier layers 22 and 32 may also modify the surface tension thereof through removal or agitation of the surface molecules.”⁵ Similarly, Graff described photo-treatment for reducing contamination resulting from face-to-back interactions that may have occurred in a wound roll of a web substrate 310 with an inorganic layer deposited thereon.⁶ However, Graff has not been shown to have described “modifying at least a portion of [a] second surface of [a] first ceramic barrier layer such that the second surface of the first ceramic barrier layer comprises a material different from the material of the first ceramic barrier layer located below the second surface to introduce first nucleation sites on the second surface . . .,” as recited in amended claim 1. For at least this reason, Graff has not been shown to have described each and every feature of amended claim 1.

Claim 27 was rejected under 35 U.S.C. 103(a) as being unpatentable over Graff in light of U.S. Pat. No. 6,522,067 ("Graff '067"), cited as having described a ceramic barrier containing encapsulation. However, Graff '067 has not been shown to cure the deficiencies of Graff described above with respect to claim 1. For at least this reason, Graff and Graff '067, alone or in combination, do not provide a *prima facie* case of obviousness of claim 27.

CONCLUSION

In view of the foregoing, the Applicants respectfully reconsideration and withdrawal of the rejection of the pending claims as anticipated by and/or unpatentable over the cited art of record. Each dependent claim is patentable for at least similar reasons supporting patentability of the claim(s) on which it depends.

Any circumstance in which the Applicants have (a) addressed certain comments of the examiner does not mean that the Applicants concede other comments of the examiner, (b) made

⁴ *Id.* at ¶[0073].

⁵ *Id.* at ¶[0082].

⁶ *See, e.g.*, ¶[0088].

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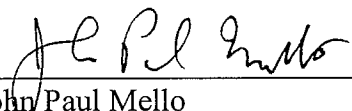
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arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the Applicants concede any of the examiner's positions with respect to that claim or other claims.

No fees are believed to be due. Please apply any charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 12406-0083001.

Respectfully submitted,

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